

Claims

[c1] What is claimed is:

1.A direct-type back light module with photo sensors comprising:

a housing with a transparent top surface;

a first lamp installed in the housing;

a second lamp arranged in parallel with the first lamp and installed in the housing;

a first lamp driving loop for driving the first lamp to emit light;

a second lamp driving loop for driving the second lamp to emit light;

a first photo sensor installed in the housing for detecting the illumination of the first lamp;

a second photo sensor installed in the housing for detecting the illumination of the second lamp; and

a comparative and arithmetic unit;

wherein the first and second photo sensors are employed to respectively detect the illuminations of the first and second lamps, respectively generate a first signal and a second signal and respectively transmit the first and second signals to the comparative and arithmetic unit as the first and second lamp driving loops respec-

tively supply a first lamp current and a second lamp current to respectively drive the first and second lamps to emit light, and the comparative and arithmetic unit is employed to generate and transmit a first feedback signal and a second feedback signal respectively to the first and second lamp driving loops for adjusting the first and second lamp currents, respectively, to achieve a uniform illumination of both the first and second lamps.

[c2] 2.The direct-type back light module of claim 1 wherein either the first or the second photo sensor comprises either a photo diode, a charge couple device (CCD), a photo transistor or a photosensitive resistor.

[c3] 3.The direct-type back light module of claim 1 wherein the first and second photo sensors are respectively installed in a first position and a second position capable of detecting an illumination difference between the first and the second lamps.

[c4] 4.The direct-type back light module of claim 1 wherein the first and second lamps are both either light emitting diodes (LEDs) or cold cathode fluorescent lamps (CCFLs).

[c5] 5.A direct-type back light module with photo sensors comprising:
a housing comprising a first region and a second region,

each of the first and second regions comprising at least a lamp;
a main lamp driving loop for driving the lamps in the first and second regions to emit light;
a photo detecting device installed in the housing for detecting the illumination of the lamps in the first and second regions; and
a comparative and arithmetic unit;
wherein the photo detecting device is employed to detect the illuminations of the lamps in the first and second regions, generate a first signal and a second signal and transmit the first and second signals to the comparative and arithmetic unit as the main lamp driving loop drives the lamps in the first and second regions to emit light, and the comparative and arithmetic unit is employed to generate and transmit a first feedback signal and a second feedback signal respectively to the main lamp driving loop for adjusting the main lamp driving loop to achieve an uniform illumination of lamps in both the first and second region.

[c6] 6.The direct-type back light module of claim 5 wherein the photo detecting device comprises a plurality of photo sensors.

[c7] 7.The direct-type back light module of claim 6 wherein the photo sensor comprises either a photo diode, a CCD,

a photo transistor or a photosensitive resistor.

- [c8] 8.The direct-type back light module of claim 6 wherein each of the photo sensors is corresponding to one of the lamps in either the first or the second regions.
- [c9] 9.The direct-type back light module of claim 6 wherein the photo detecting device comprises a pair of photo sensors.
- [c10] 10.The direct-type back light module of claim 9 wherein the pair of photo sensors are respectively corresponding to the first and second regions.
- [c11] 11.The direct-type back light module of claim 10 wherein the pair of photo sensors are respectively installed in a first position in the first region and a second position in the second region capable of detecting an illumination difference between lamps in the first and the second regions.
- [c12] 12.The direct-type back light module of claim 5 wherein the main lamp driving loop comprises a first minor lamp driving loop and a second minor lamp driving loop for respectively driving the lamps in the first and second regions to emit light.
- [c13] 13.The direct-type back light module of claim 12

wherein the photo detecting device is employed to detect the illuminations of the lamps in the first and second regions, generate a first signal and a second signal respectively corresponding to the illuminations of the lamps in the first and second regions and transmit the first and second signals to the comparative and arithmetic unit as the first and second minor lamp driving loops respectively supply a first lamp current and a second lamp current to respectively drive the lamps in the first and second regions to emit light, and the comparative and arithmetic unit is employed to generate and transmit a third signal and a fourth signal respectively to the first and second minor lamp driving loops for adjusting the first and second lamp currents, respectively, to achieve a uniform illumination of the lamps in both the first and second regions.